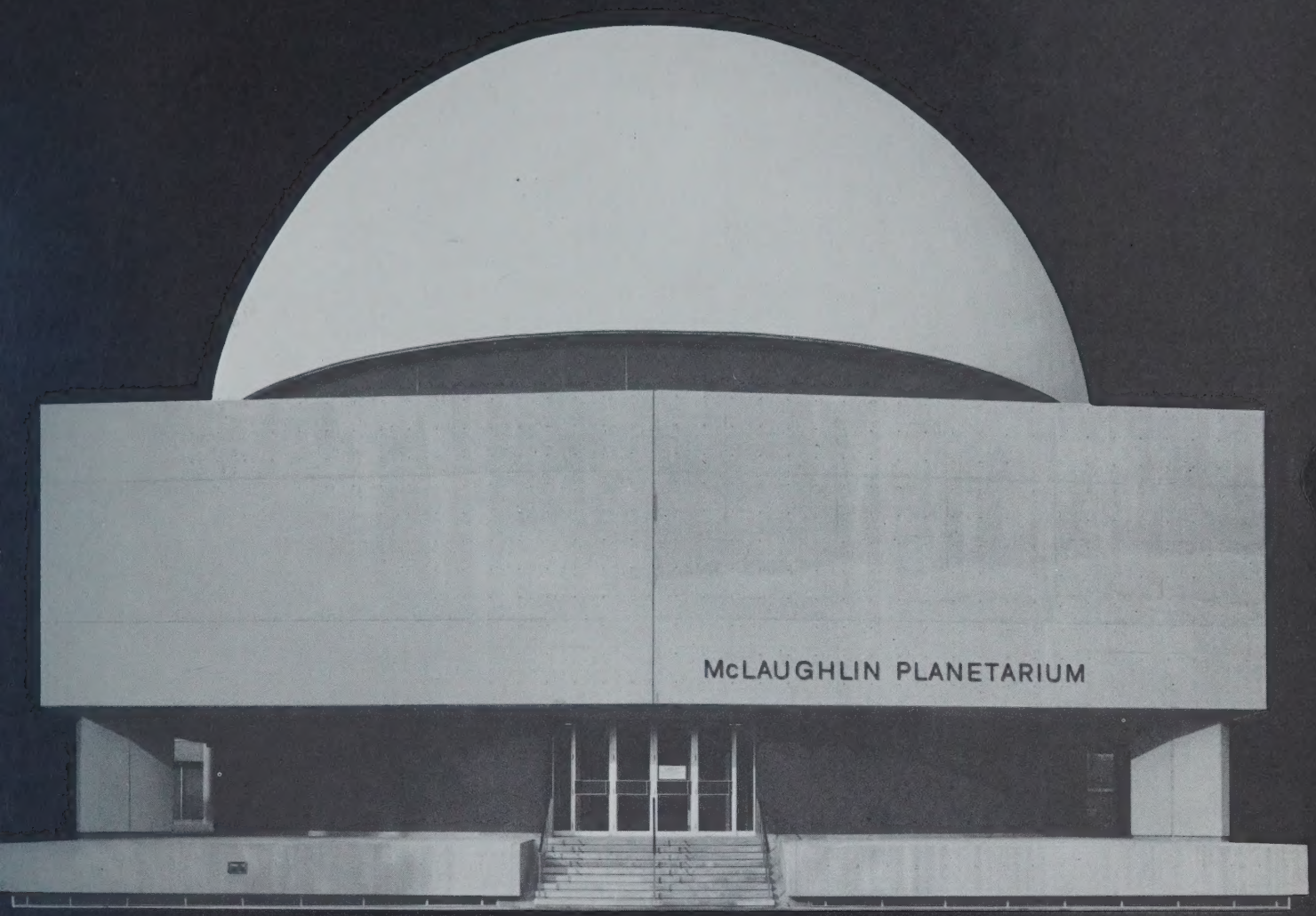

THE McLAUGHLIN PLANETARIUM

OF THE ROYAL ONTARIO MUSEUM, TORONTO, CANADA

The McLaughlin Planetarium opened to the public November 2, 1968. It took two years to build and cost $2,250,000. Among the largest and most modern planetariums in the world, it was a gift to the Royal Ontario Museum for the people of Toronto and Ontario from the late R. S. McLaughlin of Oshawa, Ontario. Mr. McLaughlin was Chairman of the Board of General Motors of Canada, and a pioneer in the automobile industry.

The main feature of the Planetarium is the circular Star Theatre containing 361 special reclining seats. High above the audience is the immense dome. The inner surface of the dome, 75 feet in diameter, is like a huge movie screen. On it are projected all the wonders of the universe—the sun, moon, planets and thousands of stars, as well as comets, the Northern Lights and even the paths of spacecraft. All these attractions of the night sky are created with projectors. Most of the projectors (about 150 of them) are in the Zeiss Planetarium Instrument which stands like a robot in the centre of the Theatre. Other projectors are located in the cove running around the base of the dome. With such equipment, the star-filled sky can be shown as it appears from any place on earth and from out in space, for any time in the past, present or future.

The Planetarium also has an exhibit area containing 198 displays offering a stimulating introduction to astronomy and a preparation for the excitement of a Star Theatre show. Other features of the Planetarium include a comprehensive library, a lecture room, work shops and lens grinding facilities, and a sales desk stocked with publications for all ages.

Shows in the Star Theatre are changed several times a year. Each new show presents a different aspect of the universe beyond our earth. Visit the McLaughlin Planetarium often and see each show.

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OUTER SPACE...

Solar System and Our Celestial Neighbors

The dawn of the Space Age has brought great interest in rocketry, missiles and high altitude research. Today, space travel is not a faraway dream for future generations. The fantastic energy necessary to hurl a man-made satellite into orbit at 18,000 miles per hour is no longer beyond our technological means. This chart has been prepared to help people better understand the basic make-up of the Solar System and the fundamental problems that confront the scientist in his efforts to push back the vast frontiers of space.

References

* UNCERTAIN
± MORE OR LESS
† HAS DENSE ATMOSPHERE WHICH HIDES SURFACE
‡ RING SYSTEM COMPOSED OF SMALL PARTICLES—POSSIBLY ICE

This chart is a graphic interpretation and does not attempt to illustrate relative sizes, distances or orbital planes in actual proportion or perspective.

COMET

ASTEROIDS

APPROXIMATE TIME FOR A JET PLANE TRAVELING 600 MILES PER HOUR TO FLY FROM THE EARTH TO THE SUN AND ORBITS OF PLANETS

MEAN DISTANCE OF PLANETS FROM SUN IN MILLIONS OF MILES

17.7 years · 10.5 years · 5 years · 9 years · 74 years · 151 years · 322 years · 514 years · 680 years

36 · 67 · 93 · 142 · 483 · 886 · 1782 · 2792 · 3664

NORTH STAR (POLARIS)

BIG DIPPER (PART OF URSA MAJOR A CONSTELLATION)

Sun

The Solar System is made up of our sun, planets and other celestial bodies that revolve about the Sun. The term "solar" comes from the Latin word "sol" meaning sun. The sun is our nearest star. It holds the earth and other planets in their orbits by gravitational attraction.

DIAMETER 864,000 MILES

The sun weighs the equivalent of 333,000 earths and exerts 27.9 times as much gravitational force at its surface as does the earth. A 100-pound woman on the earth would weigh nearly a ton and a half on the sun. Unlike the solid earth, the sun is a globe of hot gas. Probably about 75% of this gas is hydrogen. Surface 10,000° F.

THE COLOR OF A STAR IS DETERMINED BY ITS TEMPERATURE

★ BLUE 50,000° F ☆ YELLOW 11,000° F
☆ WHITE 20,000° F ★ RED 5,000° F

EARTH'S ATMOSPHERIC LAYERS

EXOSPHERE ABOVE 250 MILES
IONOSPHERE 250 MILES
CHEMOSPHERE 50 MILES
STRATOSPHERE 20 MILES
TROPOSPHERE 10 MILES
CHANGING WEATHER

MERCURY	VENUS	EARTH	MARS	JUPITER	SATURN	URANUS	NEPTUNE	PLUTO
SOLID BODY	SOLID BODY	SOLID BODY	SOLID BODY	SOLID BODY (?)†	SOLID BODY (?)†	SOLID BODY (?)†	SOLID BODY (?)†	SOLID BODY
REVOLVES AROUND SUN IN 88 DAYS	REVOLVES AROUND SUN IN 225 DAYS	REVOLVES AROUND SUN IN 365 DAYS	REVOLVES AROUND SUN IN 687 DAYS	REVOLVES AROUND SUN IN 11.9 YEARS	REVOLVES AROUND SUN IN 29.5 YEARS	REVOLVES AROUND SUN IN 84 YEARS	REVOLVES AROUND SUN IN 165 YEARS	REVOLVES AROUND SUN IN 248 YEARS
ROTATES ON AXIS EVERY 59 DAYS	ROTATES ON AXIS EVERY 244 DAYS	ROTATES ON AXIS EVERY 23 HRS., 56 MIN.	ROTATES ON AXIS EVERY 24 HRS., 37 MIN.	ROTATES ON AXIS EVERY 9 HRS., 50 MIN. ±	ROTATES ON AXIS EVERY 10 HRS., 14 MIN. ±	ROTATES ON AXIS EVERY 10 HRS., 49 MIN.	ROTATES ON AXIS EVERY 15 HRS., 40 MIN. ±	ROTATES ON AXIS EVERY 153 HRS. 22 MIN. (?)*
DIA. 3,010 MILES	DIA. 7,700 MILES	DIA. 7,918 MILES	DIA. 4,200 MILES	DIA. 88,700 MILES	DIA. 75,100 MILES	DIA. 29,200 MILES	DIA. 27,700 MILES	DIAMETER 3,600 MILES (?)*
NO SATELLITES	NO SATELLITES	1 SATELLITE (MOON)	2 SATELLITES	12 SATELLITES	10 SATELLITES RING SYSTEM‡	5 SATELLITES	2 SATELLITES	NO SATELLITES

SPACE GLOSSARY

ASTEROID—One of many small planets whose orbits lie between the orbits of Mars and Jupiter.

CONSTELLATION—A group or configuration of many stars that form a definite pattern in the sky.

ELLIPSE—The geometrical form of the orbit of a celestial body revolving around another. The paths are much like flattened circles in shape.

GALAXY—An assemblage of literally billions of stars—often interspersed with gas and dust.

LIGHT-YEAR—A measure of distance based on the speed of light (186,000 miles per second) x the total number of seconds in a year's time.

METEORITE—A piece of interplanetary material that strikes the earth's atmosphere and burns, causing a streak often called a "Shooting Star."

ORBIT—The regular path followed by a celestial body revolving around another object or body.

REVOLUTION—The movement of an object about an external point or another object. The earth and the other planets revolve around the sun.

ROTATION—The spinning motion of an object on its axis, through its centre. The earth rotates.

SATELLITE—A body in orbit around a planet. The moon, a secondary planet, is the earth's satellite.

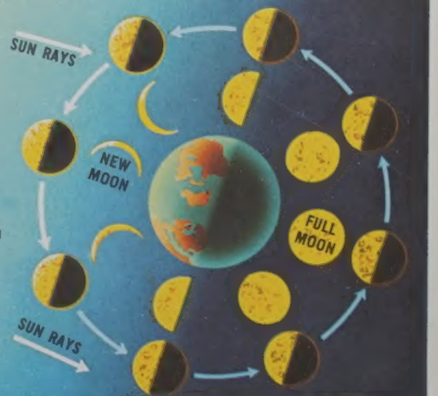
STAR—A self-luminous body as distinguished from planets which shine by reflected light. Stars are classified by degree of brightness.

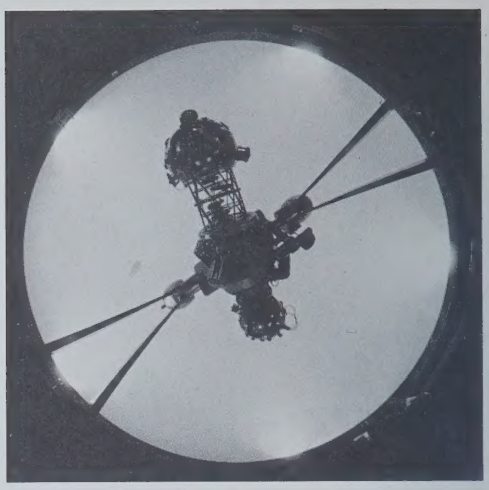
Courtesy of
GENERAL MOTORS OF CANADA

EARTH'S MOON

Earth's only natural satellite
Diameter 2,160 miles
Mean distance from earth 239,000 miles
Nearest (average) distance from earth 221,000 miles
Farthest (average) distance from earth 252,000 miles
Approx. 16.5 days from earth at 600 M.P.H.
Period of rotation is 27⅓ days
Revolves around the earth every 27⅓ days
Reflects light from the sun—emits no light of its own
No atmosphere has been detected
30,000 labeled craters on its surface
No life, as we know it, expected on moon—extreme temperatures and no oxygen

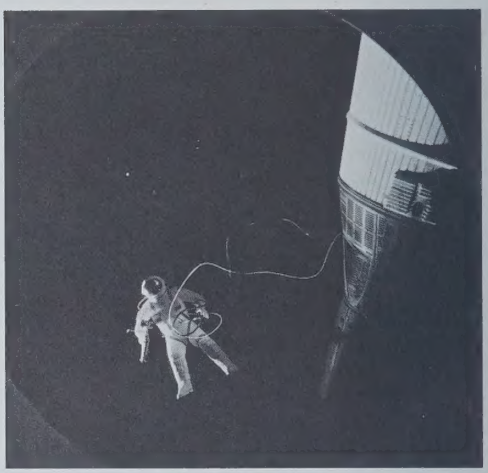
The moon's period of rotation is the same as its period of revolution, consequently it keeps the same side toward the earth at all times.



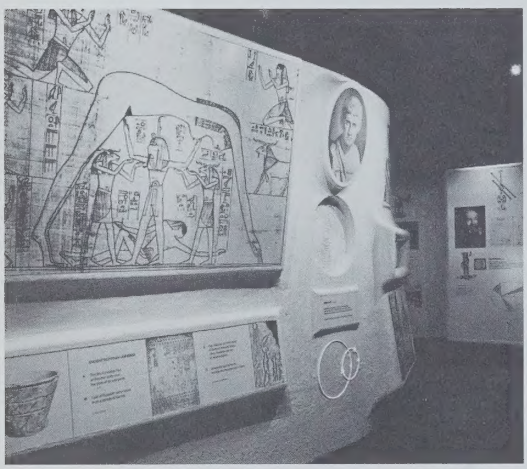


The Zeiss Planetarium Instrument in the Star Theatre

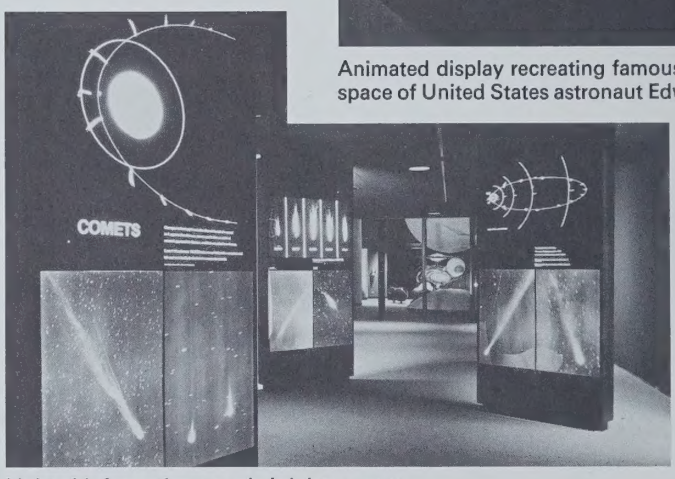
AT THE McLAUGHLIN PLANETARIUM, SEE...



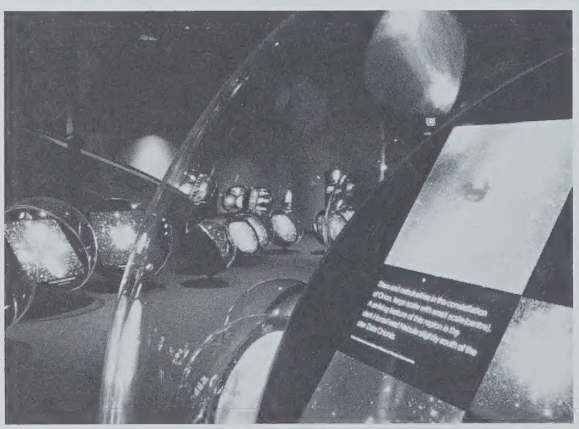
Animated display recreating famous walk in space of United States astronaut Edward H. White



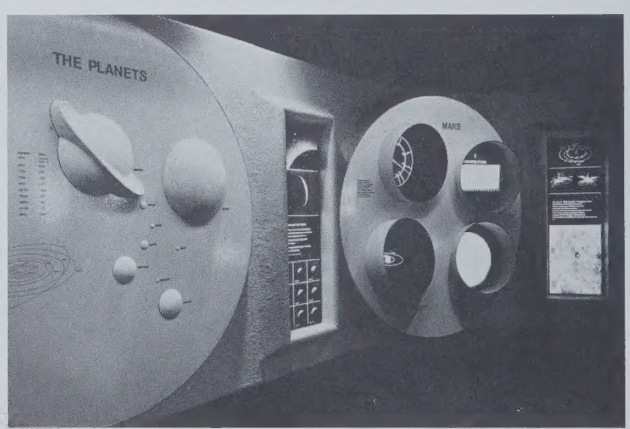
Astronomical displays contain historical background



Lighted information panels brighten route to Star Theatre



Hall of Stars features glowing globes



Variety of colourful displays fascinates visitors to exhibit area

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